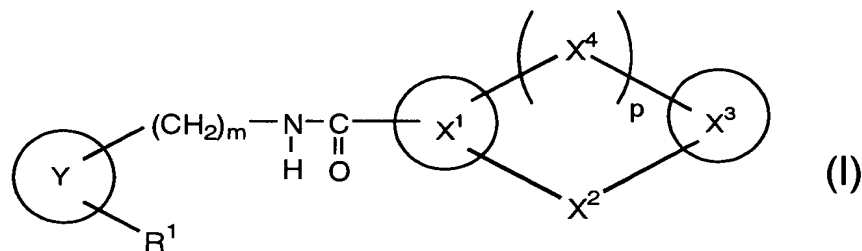
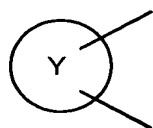


CLAIMS

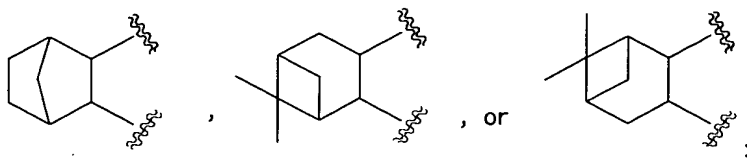
1. A pharmaceutical composition having a dual antagonistic activity against PGD₂/TXA₂ receptors which comprises a compound of the formula (I):



wherein



is



- 10 R¹ is -CH₂-CH=CH-CH₂-CH₂-CH₂-COOR² or -CH=CH-CH₂-CH₂-CH₂-COOR²;
R² is hydrogen or alkyl;
m is 0 or 1;
p is 0 or 1, provided that when p = 0, X¹ is not bonded to X³ via X⁴;
X¹ and X³ each is independently optionally substituted aryl or optionally
15 substituted heteroaryl;
X² is a bond, -CH₂-, -CH₂-CH₂-, -C(=O)-, -O-, -S-, -SO-, -SO₂-, -NH-, -N(CH₃)-,
-C(=N-O-CH₃)-, -N=N-, -CH=CH-, -(C=O)-NH-, -NH-(C=O)-, -CH₂-NH-, -NH-
CH₂-, -CH₂-O-, -O-CH₂-, -CH₂-S-, -S-CH₂-, -CH₂-SO₂-, -SO₂-CH₂-, -SO₂-NH- or
-NH-SO₂-;
20 X⁴ is -CH₂-, -CH₂-CH₂-, -C(=O)-, -SO-, -SO₂-, -(C=O)-NH-, -NH-(C=O)-, -CH₂-

NH-, -NH-CH₂-, -CH₂-O-, -O-CH₂-, -CH₂-S-, -S-CH₂-, -CH₂-SO₂-, -SO₂-CH₂-, -SO₂-NH- or -NH-SO₂-, a prodrug, a pharmaceutically acceptable salt or a hydrate thereof.

2 . The pharmaceutical composition having a dual antagonistic activity
5 against PGD₂/TXA₂ receptors according to claim 1 wherein at least one of X¹ and X³ is optionally substituted heteroaryl.

3 . The pharmaceutical composition having a dual antagonistic activity against PGD₂/TXA₂ receptors according to claim 1 or 2 wherein R¹ is -CH₂-CH=CH-CH₂-CH₂-CH₂-COOH, m is 0 and p is 0.

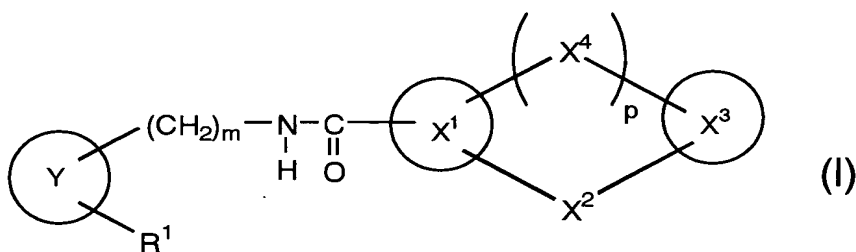
10 4 . The pharmaceutical composition having a dual antagonistic activity against PGD₂/TXA₂ receptors according to any one of claims 1 to 3 which is used for asthma.

5 5 . The pharmaceutical composition having a dual antagonistic activity against PGD₂/TXA₂ receptors according to any one of claims 1 to 3 which is
15 used for nasal blockage.

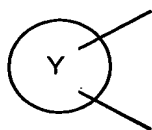
6 . Use of the compound according to any one of claims 1 to 3 for manufacturing a pharmaceutical composition for asthma or nasal blockage.

7 . A method for treating asthma or nasal blockage which comprises administering the compound according to any one of claims 1 to 3.

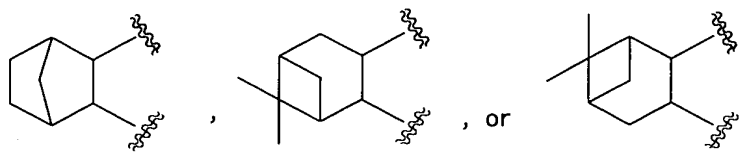
20 8 . A compound of the formula (I):



wherein



is



R^1 is $-\text{CH}_2-\text{CH}=\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{COOR}^2$ or $-\text{CH}=\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{COOR}^2$;

5 R^2 is hydrogen or alkyl;

m is 0 or 1;

p is 0 or 1, provided that when $p = 0$, X^1 is not bonded to X^3 via X^4 ;

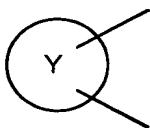
X^1 and X^3 each is independently optionally substituted aryl or optionally substituted heteroaryl;

10 X^2 is a bond, $-\text{CH}_2-$, $-\text{CH}_2-\text{CH}_2-$, $-\text{C}(=\text{O})-$, $-\text{O}-$, $-\text{S}-$, $-\text{SO}-$, $-\text{SO}_2-$, $-\text{NH}-$, $-\text{N}(\text{CH}_3)-$, $-\text{C}(=\text{N}-\text{O}-\text{CH}_3)-$, $-\text{N}=\text{N}-$, $-\text{CH}=\text{CH}-$, $-(\text{C}=\text{O})-\text{NH}-$, $-\text{NH}-(\text{C}=\text{O})-$, $-\text{CH}_2-\text{NH}-$, $-\text{NH}-\text{CH}_2-$, $-\text{CH}_2-\text{O}-$, $-\text{O}-\text{CH}_2-$, $-\text{CH}_2-\text{S}-$, $-\text{S}-\text{CH}_2-$, $-\text{CH}_2-\text{SO}_2-$, $-\text{SO}_2-\text{CH}_2-$, $-\text{SO}_2-\text{NH}-$ or $-\text{NH}-\text{SO}_2-$;

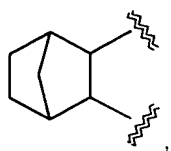
X^4 is $-\text{CH}_2-$, $-\text{CH}_2-\text{CH}_2-$, $-\text{C}(=\text{O})-$, $-\text{SO}-$, $-\text{SO}_2-$, $-(\text{C}=\text{O})-\text{NH}-$, $-\text{NH}-(\text{C}=\text{O})-$, $-\text{CH}_2-$

15 $\text{NH}-$, $-\text{NH}-\text{CH}_2-$, $-\text{CH}_2-\text{O}-$, $-\text{O}-\text{CH}_2-$, $-\text{CH}_2-\text{S}-$, $-\text{S}-\text{CH}_2-$, $-\text{CH}_2-\text{SO}_2-$, $-\text{SO}_2-\text{CH}_2-$, $-\text{SO}_2-\text{NH}-$ or $-\text{NH}-\text{SO}_2-$;

provided that when

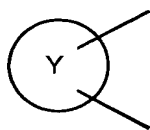


is

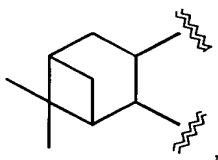


a compound wherein R^1 is $-\text{CH}_2-\text{CH}=\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{COOR}^2$, R^2 is hydrogen or methyl, m is 0, p is 0, X^1 is phenyl optionally substituted with methoxy, X^2 is a bond, $-\text{O}-$, $-\text{CH}_2-$, $-\text{C}(=\text{O})-\text{NH}-$, $-\text{S}-$ or $-\text{N}=\text{N}-$, and X^3 is phenyl optionally substituted with hydroxy, acetoxy or methoxy, and a compound wherein R^1 is $-\text{CH}_2-\text{CH}=\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{COOH}$, m is 1, p is 0, X^1 is phenyl, X^2 is $-\text{N}=\text{N}-$, and X^3 is phenyl, are excluded, and

when



is



R^1 is $-\text{CH}_2-\text{CH}=\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{COOR}^2$, R^2 is hydrogen or methyl, m is 0, and p is 0, a compound wherein X^1 is phenyl optionally substituted with methyl or methoxy, X^2 is a bond, $-\text{CH}_2-\text{CH}_2-$, $-\text{C}(=\text{O})-$, $-\text{NH}-$, $-\text{O}-$, $-\text{S}-$, $-\text{SO}-$, $-\text{SO}_2-$, $-\text{CH}=\text{CH}-$, $-\text{N}=\text{N}-$, $-\text{C}(=\text{O})-\text{NH}-$ or $-\text{NH}-\text{C}(=\text{O})-$, and X^3 is phenyl optionally substituted with methyl, hydroxy, acetoxy, methoxy, ethoxy, isopropoxy, dimethylamino, hydroxymethyl, methoxymethyl or carboxy, a compound wherein X^1 is phenyl, X^2 is a bond, $-\text{CH}_2-$ or $-\text{CH}=\text{CH}-$, and X^3 is imidazolyl, thienyl, pyridyl or tetrazolyl optionally substituted with methyl or phenyl, and a compound wherein X^1 is benzothienyl, isoxazolyl or thienyl optionally substituted with methyl, X^2 is a bond or $-\text{S}-$, and X^3 is phenyl

optionally substituted with methoxy or methyl, are excluded, a prodrug, a pharmaceutically acceptable salt, a hydrate thereof.

9. The compound according to claim 8 wherein at least one of X^1 and X^3 is optionally substituted heteroaryl, the prodrug, the pharmaceutically acceptable salt, the hydrate thereof.

10. The compound according to claim 8 wherein X^1 and X^3 each is independently optionally substituted heteroaryl, the prodrug, the pharmaceutically acceptable salt, the hydrate thereof.

11. The compound according to claim 8 wherein at least one of X^1 and X^3 is optionally substituted thienyl or optionally substituted benzothienyl, the prodrug, the pharmaceutically acceptable salt, the hydrate thereof.

12. The compound according to any one of claims 8 to 11 wherein X^2 is a bond, $-CH_2-$, $-S-$, $-SO_2-$, $-CH_2-O-$, $-O-CH_2-$, $-CH_2-S-$ or $-S-CH_2-$, the prodrug, the pharmaceutically acceptable salt, the hydrate thereof.

13. The compound according to any one of claims 8 to 12 wherein R^1 is $-CH_2-CH=CH-CH_2-CH_2-CH_2-COOH$, m is 0, and p is 0, the prodrug, the pharmaceutically acceptable salt, the hydrate thereof.

14. A pharmaceutical composition which comprises a compound according to any one of claims 8 to 13.

15. A pharmaceutical composition having a dual antagonistic activity against PGD_2/TXA_2 receptors which comprises a compound according to any one of claims 8 to 13.

16. The pharmaceutical composition comprising a compound according to claim 14 or 15, which is used for asthma.

17. The pharmaceutical composition comprising a compound according to claim 14 or 15, which is used for nasal blockage.